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Nota di contenuto	Introduction -- SSMB Longitudinal Dynamics -- SSMB Transverse-Longitudinal Coupling Dynamics -- SSMB Radiation -- Formulation of Radiation from a Rigid Beam -- SSMB Proof-of-Principle Experiments. Summary. .
Sommario/riassunto	This open access book is devoted to the theoretical and experimental studies of a novel accelerator light source mechanism called steady-state microbunching (SSMB) which promises high-power, high-repetition rate, narrow-band coherent radiation in an electron storage ring. The contribution of this dissertation consists of three parts: first,

answers the question of how to realize SSMB from a beam dynamics perspective; second, reveals what radiation characteristics can we obtain from the formed SSMB; and third, experimentally demonstrates the working mechanism of SSMB in a real machine for the first time. The highlights of this book can be summarized as: Presents the first proof-of-principle experiment of a promising accelerator light source mechanism; Covers precision longitudinal and transverse-longitudinal coupling dynamics in a storage ring; Provides useful formulas and example parameters for high-power infrared, EUV and soft X-ray light source design. .
